

SUPPORT FOR THE AMENDMENTS

Claims 1-4 have been amended.

Claims 5-15 have been added.

Support for the amendment of Claims 1-4 and for new Claims 5-15 is provided by original Claims 1-4, the specification at pages 3-9, and the Examples.

No new matter has been added by the present amendment.

REMARKS

Claims 1-25 are pending in the present application.

The rejection of Claims 1 and 3-4 under 35 U.S.C. §102(a) and 35 U.S.C. §102(b) over Hwang et al is respectfully traversed.

With respect to Hwang et al, Applicants submit that Hwang et al do not disclose or suggest the content of oxazole and hydrogen cyanide in the acrylonitrile starting material. It appears to be the Examiner's position that the absence of a recitation to the oxazole and/or hydrogen cyanide content in the acrylonitrile starting material is akin to their being none and, thus, would read upon the limitation "less than" the recited amounts. Applicants submit that this position is not correct. Specifically, Applicants submit that commercially available acrylonitrile, which was presumably used in Hwang et al, has 1 mg to 100 mg oxazole per kg of acrylonitrile (page 4, lines 1-2 of the specification), and 0.1 mg to 5 mg hydrogen cyanide per kg of acrylonitrile (page 4, lines 13-14 of the specification).

Although there is a *chance* that the acrylonitrile used in Hwang et al would meet the disclosed oxazole and hydrogen cyanide requirements, there is certainly no reason to believe this to be the case. In fact, based on the fact that the significant majority of the commercial available range exceeds the claimed scope, it appears that the expectation would be that the oxazole and hydrogen cyanide content exceeds that of the claimed invention. Nonetheless, Applicants submit that the failure of Hwang et al to realize the importance of the oxazole and hydrogen cyanide content, as well as failing to disclose controlling this level in the starting material is a fatal defect in the Hwang et al reference.

In view of the foregoing, withdrawal of this ground of rejection is requested.

The rejection of Claims 1-4 under 35 U.S.C. §102(b) over Murao et al (WO 02/50297 and US 2004/0048348) is respectfully traversed.

With respect to Murao et al, Applicants submit that at no point does this reference disclose the polymerization of acrylamide monomers prepared by hydrating acrylonitrile by using a nitrile hydratase. Therefore, Murao et al simply do not disclose or suggest all the limitations of the claimed invention and, as such, this ground of rejection should be withdrawn.

Further, as with Hwang et al, Applicants submit that Murao et al do not disclose or suggest the content of oxazole and hydrogen cyanide in the acrylonitrile starting material. It appears to be the Examiner's position that the absence of a recitation to the oxazole and/or hydrogen cyanide content in the acrylonitrile starting material is akin to their being none and, thus, would read upon the limitation "less than" the recited amounts. Applicants submit that this position is not correct. Specifically, Applicants submit that commercially available acrylonitrile, which was presumably used in Murao et al, has 1 mg to 100 mg oxazole per kg of acrylonitrile (page 4, lines 1-2 of the specification), and 0.1 mg to 5 mg hydrogen cyanide per kg of acrylonitrile (page 4, lines 13-14 of the specification).

Although there is a *chance* that the acrylonitrile used in Murao et al would meet the disclosed oxazole and hydrogen cyanide requirements, there is certainly no reason to believe this to be the case. In fact, based on the fact that the significant majority of the commercial available range exceeds the claimed scope, it appears that the expectation would be that the oxazole and hydrogen cyanide content exceeds that of the claimed invention. Nonetheless, Applicants submit that the failure of Murao et al to realize the importance of the oxazole and hydrogen cyanide content, as well as failing to disclose controlling this level in the starting material is a fatal defect in the Murao et al reference.

In view of the foregoing, withdrawal of this ground of rejection is requested.

The rejection of Claims 1-4 under 35 U.S.C. §102(b) over Ishii et al (WO 02/50297 and US 2004/0048348) is respectfully traversed.

As in the case of Murao et al, Applicants submit that at no point do Ishii et al disclose the polymerization of acrylamide monomers prepared by hydrating acrylonitrile by using a nitrile hydratase. Therefore, Ishii et al simply do not disclose or suggest all the limitations of the claimed invention and, as such, this ground of rejection should be withdrawn.

Further, as with Hwang et al and Murao et al, Applicants submit that Ishii et al do not disclose or suggest the content of oxazole and hydrogen cyanide in the acrylonitrile starting material. It appears to be the Examiner's position that the absence of a recitation to the oxazole and/or hydrogen cyanide content in the acrylonitrile starting material is akin to their being none and, thus, would read upon the limitation "less than" the recited amounts. Applicants submit that this position is not correct. Specifically, Applicants submit that commercially available acrylonitrile, which was presumably used in Ishii et al, has 1 mg to 100 mg oxazole per kg of acrylonitrile (page 4, lines 1-2 of the specification), and 0.1 mg to 5 mg hydrogen cyanide per kg of acrylonitrile (page 4, lines 13-14 of the specification).

Although there is a *chance* that the acrylonitrile used in Ishii et al would meet the disclosed oxazole and hydrogen cyanide requirements, there is certainly no reason to believe this to be the case. In fact, based on the fact that the significant majority of the commercial available range exceeds the claimed scope, it appears that the expectation would be that the oxazole and hydrogen cyanide content exceeds that of the claimed invention. Nonetheless, Applicants submit that the failure of Ishii et al to realize the importance of the oxazole and

hydrogen cyanide content, as well as failing to disclose controlling this level in the starting material is a fatal defect in the Ishii et al reference.

In view of the foregoing, withdrawal of this ground of rejection is requested.

The rejection of Claims 1 and 3-4 under 35 U.S.C. §102(b) over Oriel et al is respectfully traversed.

With respect to Oriel et al, Applicants submit that Oriel et al do not disclose or suggest the content of oxazole and hydrogen cyanide in the acrylonitrile starting material. It appears to be the Examiner's position that the absence of a recitation to the oxazole and/or hydrogen cyanide content in the acrylonitrile starting material is akin to their being none and, thus, would read upon the limitation "less than" the recited amounts. Applicants submit that this position is not correct. Specifically, Applicants submit that commercially available acrylonitrile, which was presumably used in Oriel et al, has 1 mg to 100 mg oxazole per kg of acrylonitrile (page 4, lines 1-2 of the specification), and 0.1 mg to 5 mg hydrogen cyanide per kg of acrylonitrile (page 4, lines 13-14 of the specification).

Although there is a *chance* that the acrylonitrile used in Oriel et al would meet the disclosed oxazole and hydrogen cyanide requirements, there is certainly no reason to believe this to be the case. In fact, based on the fact that the significant majority of the commercial available range exceeds the claimed scope, it appears that the expectation would be that the oxazole and hydrogen cyanide content exceeds that of the claimed invention. Nonetheless, Applicants submit that the failure of Oriel et al to realize the importance of the oxazole and hydrogen cyanide content, as well as failing to disclose controlling this level in the starting material is a fatal defect in the Oriel et al reference.

In view of the foregoing, withdrawal of this ground of rejection is requested.

In view of the foregoing, Applicants submit that references of record do not disclose or suggest the content of oxazole and hydrogen cyanide in the acrylonitrile starting material. Based on the disclosed range of such concentrations in commercially available acrylonitrile, at best, these references would represent a case of obviousness.

However, Applicants wish to direct the Examiner's attention to the results set forth in Table 1 on page 13, which clearly show the criticality of the claimed oxazole and hydrogen cyanide content in the acrylonitrile starting material. In particular, Applicants direct the Examiner's attention to Example 1 and Comparative Example 3, which supports a conclusion of unexpectedness. Specifically, although the only difference between Example 1 and Comparative Example 3 is the concentration of hydrogen cyanide, Example 1 shows improvement in the solubility of polymer aqueous solution and the color of the polymer powder. Heretofore, it was known that hydrogen cyanide contained in acrylonitrile is a catalytic poison. However, the skilled artisan would not know that the concentration of hydrogen cyanide in acrylonitrile affects the quality of acrylamide polymers. Therefore, the results set forth in Table 1 on page 13 of the specification are unexpected. And, as such, the cited references do not even support a *prima facie* case of obviousness.

Finally, with respect to the statutory (35 U.S.C. §101) double patenting rejections over Ishii et al (US 6,043,061) and U.S. 10/450,532, Applicants respectfully traverse this rejection.

Applicants respectfully submit that neither the claims of Ishii et al or U.S. 10/450,532, contain a recitation to polymerization of acrylamide monomers prepared by hydrating acrylonitrile by using a nitrile hydratase. Therefore, Ishii et al and U.S. 10/450,532 simply do

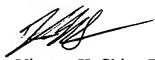
not disclose or suggest all the limitations of the claimed invention and, as such, this ground of rejection should be withdrawn.

Applicants submit that the present application is now in condition for allowance.

Early notification of such action is earnestly solicited.

Respectfully submitted,

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